

AKIZI  
1925/26

THE MUNICIPAL  
UNIVERSITY *of* AKRON  
*McJoynt*

AKRON, OHIO

APRIL, 1926

COLLEGE OF ENGINEERING  
AND COMMERCE  
1925-1926



PUBLISHED BY  
THE MUNICIPAL UNIVERSITY OF AKRON

ROYAL 284

## UNIVERSITY CALENDAR

### 1926

- JANUARY 4, MONDAY.....Class work resumed in all departments
- JANUARY 11 TO 16.....Classification for second semester, all departments except Co-operative Engineering and Commerce
- JANUARY 21, THURSDAY, .....Founder's Day Entertainment  
8:00 p. m.
- JANUARY 22, FRIDAY.....Celebration of Founder's Day (January 18)  
and Inauguration of President George  
Frederick Zook
- JANUARY 23, SATURDAY.....Registration and classification for Evening  
2:00-5:00 and 7:00-9:00 p. m. Session for second semester
- JANUARY 29 AND 30.....Registration and classification of new students  
FRIDAY, 9:00 a. m.-4:00 p. m. for second semester  
SATURDAY, UNTIL NOON
- JANUARY 25 TO 30.....Final Examinations
- FEBRUARY 1, MONDAY.....Class work begins for Evening Session
- FEBRUARY 1 AND 2.....Classification for Co-operative students in  
College of Engineering and Commerce  
(Section I)
- FEBRUARY 3, WEDNESDAY.....Second semester begins for day sessions in all  
departments
- FEBRUARY 22, MONDAY.....Washington's Birthday—a holiday
- FEBRUARY 23, TUESDAY.....Classification for Co-operative Engineering  
and Commerce students (Section II)
- MARCH 19, FRIDAY.....Sophomore Ashton Prize Contest
- MARCH 27, SATURDAY.....Easter Recess begins  
12:00 m.
- APRIL 5, MONDAY.....Class work resumed
- MAY 20, THURSDAY.....Student Elections
- MAY 21, FRIDAY.....Junior Ashton Prize Contest
- MAY 28, FRIDAY.....Tree Day
- MAY 31, MONDAY.....A holiday
- JUNE 7 TO 12.....Final Examinations
- JUNE 11, FRIDAY.....Evening Session closes, 9:30 p. m.
- JUNE 13, SUNDAY.....Baccalaureate Exercises
- JUNE 15, TUESDAY.....Commencement
- JUNE 16, WEDNESDAY.....Classification for Co-operative Engineering  
and Commerce students (Section I) for sum-  
mer session



## UNIVERSITY OF AKRON

- JUNE 21 TO JULY 30.....Summer Session in Teachers College
- JUNE 21 TO AUGUST 14.....Summer Session in College of Engineering and Commerce
- JULY 1, THURSDAY.....Practical work begins in College of Engineering and Commerce for prospective students
- JULY 15, THURSDAY.....Registration and classification begins for fall semester for new resident students in  
Buchtel College of Liberal Arts  
Curtis School of Home Economics  
Teachers College  
Also for any students desiring to enroll in the Evening Session and Saturday courses
- JULY 19, MONDAY.....Classification for Co-operative Engineering and Commerce students (Section II) for summer session
- SEPTEMBER 1, WEDNESDAY.....Registration and classification of non-resident students begins
- SEPTEMBER 3 AND 4.....Final registration and classification of new students
- SEPTEMBER 7 TO 11.....Freshman Week for students entering in February and September, 1926
- SEPTEMBER 11, SATURDAY.....Registration and classification for Evening 2:00-5:00 and 7:00-9:00 p. m. Session
- SEPTEMBER 13 AND 14 .....Registration and classification for upper classmen in all departments (Section I in College of Engineering and Commerce)
- SEPTEMBER 15, WEDNESDAY.....Class work begins for Co-operative students in College of Engineering and Commerce (Section I)  
For all day and evening sessions in all departments
- SEPTEMBER 30, THURSDAY.....Freshman Elections
- OCTOBER 4 AND 5, MONDAY.....Registration and classification for College of Engineering and Commerce (Section II for Co-operative students)  
AND TUESDAY
- OCTOBER 6, WEDNESDAY.....Class work begins for Co-operative students (Section II)
- NOVEMBER 25, 26, 27.....Thanksgiving Recess  
THURSDAY, FRIDAY AND SATURDAY
- DECEMBER 10, .....Senior Ashton Prize Contest
- DECEMBER 18, SATURDAY.....Christmas vacation begins for all departments 12:00 m.

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JANUARY 3, MONDAY.....	Class work resumed in all departments
JANUARY 17 TO 22.....	Classification for second semester, all departments except Co-operative Engineering and Commerce, and Evening Session
JANUARY 18, TUESDAY.....	Celebration of Founder's Day
JANUARY 28 AND 29.....	Registration and classification of new students
FRIDAY, 9:00 a. m.-4:00 p. m.	for second semester
SATURDAY, UNTIL NOON	
JANUARY 29, SATURDAY.....	Registration and classification for Evening
2:00-5:00 and 7:00-9:00 p. m.	Session for second semester
JANUARY 24 TO 29.....	Final Examinations
JANUARY 31, MONDAY.....	Class work begins for Evening Session
JANUARY 31 AND FEBRUARY 1.....	Classification for Co-operative students in Col-
MONDAY AND TUESDAY	lege of Engineering and Commerce (Sec- tion I)
FEBRUARY 2, WEDNESDAY.....	Second semester begins for all departments
FEBRUARY 21 MONDAY.....	Classification for Co-operative Engineering and Commerce students (Section II)
FEBRUARY 22, TUESDAY.....	Washington's Birthday—a holiday
MARCH 18, FRIDAY.....	Sophomore Ashton Prize Contest
APRIL 9, SATURDAY 12:00 m.....	Easter Recess begins
APRIL 18, MONDAY.....	Class work resumed
MAY 19, THURSDAY.....	Student Elections
MAY 20, FRIDAY.....	Junior Ashton Prize Contest
MAY 27, FRIDAY.....	Tree Day
JUNE 6 TO 11.....	Final Examinations
JUNE 10, FRIDAY.....	Evening Session closes
JUNE 12, SUNDAY.....	Baccalaureate Exercises
JUNE 14, TUESDAY.....	Commencement
JUNE 15, WEDNESDAY.....	Classification for Co-operative Engineering and Commerce students (Section I) for summer session
JUNE 20, MONDAY.....	Registration for Summer Session in Teachers College

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A. B., Wisconsin; A. M., Ph. D., Ohio State.

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\*Service begins September, 1926

†Resigned June, 1926

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\*First semester only

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999 West Exchange Street

R. G. WHITNEY, *Instructor in Salesmanship*

1849 Marks Avenue

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884 Johnston Street

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42 Atlas Street

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558 Gage Street

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162 Marvin Avenue

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\*Services began January 25, 1926

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J. V. NAUGLE, M. A.....	<i>High School Mathematics</i>
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Van Ellsworth

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1925-1926

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WEEKS (Secretary)

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SCHMIDT, SPANTON, BANKES, STIMMEL, McJOYNT

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HOUSEHOLDER, GARDNER, SCHMIDT, LIPSCOMBE, FOX, ROGERS

*College of Engineering and Commerce*

C. BULGER, McJOYNT AND DEPARTMENT HEADS IN COLLEGE OF  
ENGINEERING AND COMMERCE

*Curtis School of Home Economics*

C. BULGER, STIMMEL, STINSON

*Teachers College*

C. BULGER, BANKES, HAYES, KUHNES

*Evening Session*

SIMMONS, BANKES, PEASE, CRECRAFT, McDERMOTT, HAYES,  
MITCHELL, McEBRIGHT, TAILLIART, KRAATZ, BREITENBUCHER,  
HALLENBECK

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McEBRIGHT, McDERMOTT, THOMPSON, MARSH, DURST

SOCIAL

THOMPSON, TYDINGS, REED, HALLENBECK, GOODELL, MITCHELL,  
McDERMOTT

HOLIDAY OBSERVANCE

REED, DeLEONE, BARNHARDT, DUNCKLEY, AND CLASS ADVISERS

ATHLETICS

AYER, COLEMAN, C. R. OLIN, MOORE, SEFTON

STUDENT AFFAIRS

*(Council, Elections, Advisers, etc.)*

SIMMONS, THOMPSON, HAYES, GRIFFIN, BRODERICK



## UNIVERSITY OF AKRON

## LIBRARY

PEASE, FINDLEY, CUSHMAN, KUHNES, DAVIS, KRAATZ, J. BULGER

## SCHOLARSHIP AND HONORS

ROCKWELL, STIMMEL, KUHNES, J. BULGER, GRISMER

## EXTENSION LECTURES

DAVIS, SIMMONS, WALTHER, HAYES, GARDNER

## UNIVERSITY ASSEMBLY

DURST, GILMOUR, SMITH, DAVIES

## PSYCHOLOGICAL TESTS

BANKES, HAYES, O. E. OLIN, PEASE, AYER, GRIFFIN

## FACULTY REPRESENTATIVES FOR UNIVERSITY ACTIVITIES

FRESHMAN CLASS .....	SIMMONS
SOPHOMORE CLASS .....	CRECRAFT
JUNIOR CLASS .....	MOORE
SENIOR CLASS .....	SPANTON
WOMEN'S CLUB ROOMS .....	THOMPSON
WOMEN'S LEAGUE .....	ROGERS
MUSIC .....	DELEONE
UNIVERSITY PUBLICATIONS .....	VANCE

## THE MUNICIPAL UNIVERSITY OF AKRON

The Municipal University of Akron was created by an ordinance of the Akron City Council, passed on August 25, 1913. This ordinance accepted in behalf of the city the offer of the Trustees of Buchtel College to give to the city the entire plant and endowment of the college as the nucleus of a municipal university, the Council promising in behalf of the city to support properly the new institution thus created. After the transfer of property had been completed by President Kolbe and Secretary Olin for the Trustees of Buchtel College, Mayor Rockwell on December 15, 1913, together with City Solicitor Taylor accepted the deeds of transfer in behalf of the city and appointed nine citizens of Akron as members of the Board of Directors of the Municipal University of Akron.

Buchtel College, the institution thus turned over to the city of Akron, was founded in 1870 by the Ohio Universalist Convention and took its name from its most generous benefactor, Hon. John R. Buchtel, who consecrated his life and his wealth to its support. It was chartered by the Ohio Legislature in the same year as a College of Liberal Arts and Letters and first opened its doors for the admission of students in September, 1872.

By the terms of transfer to the City of Akron, provision was made that Buchtel College retain its name and identity as Buchtel College of Liberal Arts of the Municipal University.

The Municipal University of Akron, being supported in large part by public taxation, is entirely non-sectarian. The City of Akron has, however, agreed to carry out all provisions made by donors of funds to Buchtel College. Such funds were given in most cases to establish professorships and scholarships in the College of Liberal Arts.

## DEPARTMENTS, EQUIPMENT AND STANDARDS

### BUCHTEL COLLEGE OF LIBERAL ARTS

The College of Liberal Arts endeavors to carry out the wishes of the Founder of Buchtel College, namely, "to secure the highest grade of Classical, Scientific and Literary Culture". Four-year courses are offered leading to the degrees of Bachelor of Arts and Bachelor of Science.

### THE COLLEGE OF ENGINEERING AND COMMERCE

The College of Engineering and Commerce offers courses in various branches of engineering, and in commerce and finance.

### THE CURTIS SCHOOL OF HOME ECONOMICS

A four-year course is offered leading to the degree of Bachelor of Science in Home Economics. Especial attention is given to preparation for teaching and other vocations.

### TEACHERS COLLEGE

Teachers College is organized under the joint management of the Akron Board of Education and the Directors of the University. The work is specifically organized for the preparation and training of teachers for the Akron Public School System, the professional improvement of teachers already in the service, and the study of educational problems.

### THE EVENING SESSION

The University offers evening work in a number of departments. College credit is given for this work, except in a few courses. The subjects are mostly those of the first two years of college work in liberal arts and of the entire course in the Teachers College.

### BIERCE LIBRARY

The University Library had its origin in a collection donated in 1874 by the late General L. V. Bierce and, during the early days of Buchtel College, the library was augmented by purchases from the proceeds of a bequest received from General Bierce's estate. In recognition of this gift, the library has been called Bierce Library. It occupies all of the main floor, a portion of the basement, and the second floor of Carl F. Kolbe Hall.



The Library contains about 22,928 cataloged volumes and about 10,200 pamphlets in addition to several hundred volumes of miscellaneous books and public documents as yet uncataloged; also a considerable collection of paper bound serials and pamphlets as yet uncounted, and 4,510 mounted pictures and prints. Departmental libraries are maintained in Olin Hall for both the Biology and Physics Departments, and in the Engineering Building for the Departments of Engineering and Commerce.

Students are privileged also to use the Akron Public Library, and will find co-operative service between the two libraries. Cards for new books added in each are on file in the catalog of the other, and the resources of both libraries are open to students and citizens.

### COMBINATION COURSES

To those who wish to enter the learned professions such as law or medicine, the College of Liberal Arts offers opportunities of combination with the various professional schools of the country. By means of such combination courses a student may receive both the Arts and the professional degree, at the same time shortening by one year the period otherwise necessary.

### EQUIPMENT

At the time of the foundation of Buchtel College in 1870 a plot of six acres of ground was purchased at the outskirts of the village of Akron on a hill overlooking the valley. The growth of the city has included this site, so that now the University campus lies at the head of College Street, only a short distance from the business center of the city.

In 1899 the old main building was destroyed by fire and in 1901 Buchtel Hall was completed as the first of a modern group of college buildings. From earlier times there already existed on the campus Crouse Gymnasium and the President's residence, now used for a recitation and office building. Since the completion of Buchtel Hall there have been constructed Olin Hall, occupied by the department of biology and physics; the central heating plant; Curtis Cottage, used as the home of the School of Home Economics; the Knight Chemical Laboratory, toward the construction of which Andrew Carnegie gave \$25,000; the Carl F. Kolbe Hall, the gift of Mr. F. A. Seiberling and Mr. F. H. Mason; and the engineering building.

### STANDARDS

The Municipal University of Akron maintains in all its departments courses of standard grade and is in every sense a standard American college, as is evidenced by its membership in such standardizing organizations as the Ohio College Association and the North Central Association of Colleges and Secondary Schools. It is included in the approved list of the Association of American Universities for recommendation of the bachelor's degree to foreign universities, and is approved for pre-medical work by the American Medical Association. Its women graduates are eligible to membership in the American Association of University Women.

## ADMISSION

### METHODS OF ADMISSION

Students are admitted by examination, high school certificate, or honorable dismissal from other colleges or universities, or if over twenty-one years of age, as special students not in candidacy for a degree.

### ENTRANCE REQUIREMENTS

The requirement for unconditional entrance to any department of the University is 15 units, not less than 12 of which must be from the following subjects: English, Mathematics, Foreign Language, Science, History, Civics, Economics and Sociology. A unit is a full year's work in a subject, with four 1-hour or five 45-minute recitation periods a week.

Examinations are required in subjects presented for admission with grades below the passing mark.

No student from an Akron high school who is not a graduate will be admitted with less than 16 units except upon recommendation of the Superintendent of Schools.

### SCHOLARSHIP REQUIREMENTS

The following rules on scholarship requirements for all applicants for the Freshman class have been adopted by the faculty:

1. An average of 83% in the work taken by the student during his last two years in the high school is required for admission on certificate.
2. Each certificate shall state whether the student belongs to the upper, or the lower half of his class.

### TIME OF REGISTRATION AND CLASSIFICATION

#### DAY SESSION

*Buchtel College, School of Home Economics and Teachers College:*

Registration and classification of Freshman *resident students* (except for the College of Engineering and Commerce) will begin on July 15 and will be continuous throughout the summer, daily from 9 a. m. to 4 p. m. in room 33, Buchtel Hall. The student must present himself in person for conference with the Chairman of the Entrance Committee, and must present to him his high school record.

#### FRESHMAN WEEK

All freshmen (those entering in February as well as in September, 1926) are required to report at the University for Freshman Week, beginning September 7.

Tuesday, September 7, to Saturday noon, September 11, will be devoted entirely to Freshmen. Attendance is required at all sessions.

Students transferring from any college to Teachers College are required to take the psychological tests given during Freshman Week.

Registration and classification of *non-resident students* will begin on September 1. Certificates of out-of-town students may be mailed to the Chairman of the Entrance Committee at any time for examination by the Entrance Committee.

Registration will be limited by classes and subjects, i. e., no student will be received in any class or subject beyond the number for which the University has adequate room and teaching force. For this reason Akron students are requested to register and classify during the early part of the summer, so that they may receive first consideration and opportunity for enrollment in the regular subjects of the first year course in the day session. Students who delay registration and classification are warned that it may be impossible to assign them to the subjects desired, or that it may be necessary for them to enter classes in the Evening Session. A deposit of \$5 is required at the time of registration. This sum will be applied on fees at entrance.

#### *College of Engineering and Commerce:*

New students (both residents and non-residents) desiring to enter the College of Engineering and Commerce must send their high school record to Dean F. E. Ayer of that college before July 1, and must hold themselves in readiness to begin practical work on July 1. No assurance of entrance can be given to those who fail to report for work before July 1.

#### EVENING SESSION

Registration for the Evening Session will begin on July 15 and will be continuous for residents and non-residents throughout the summer, daily from 9 a. m. to 4 p. m. in room 33, Buchtel Hall.

#### FINAL REGISTRATION DAYS

The Final Registration Days are:

Day Session in all departments except the College of Engineering and Commerce, September 13 and 14 for the first semester and January 22 for the second semester.

College of Engineering and Commerce, September 12 and 13 for the first section and October 3 and 4 for the second section. However, no assurance of admission can be given to students who do not present themselves in readiness to begin work on July 1.

Evening Session, September 11 for the first semester, and January 29 for the second semester.

## ADVANCED CREDIT

Students presenting high school credits in a modern language or in mechanical drawing above and beyond the entrance requirements for college will be allowed college credit at the rate of fifty per cent in term hours for high school work, provided it results in a full credit in term hours, and the student shows the ability to carry advanced work.

## ADMISSION FROM OTHER COLLEGES

Students from other colleges of recognized standing may be admitted to advanced standing on presentation of a certificate of work done and a statement of honorable dismissal. A degree will not be granted a student entering with advanced standing from another college unless he spends a full year in residence and completes 32 semester hours of work. Except in Buchtel College three-fourths of this must be professional work done in the college granting the degree.

Applications for advanced standing will not be considered until the registrar of the University has received lists of credits and honorable dismissal from the institution from which the student desires to be transferred.

No student who does not meet the scholastic requirements of this institution will be received on transfer from another college or university.

## SPECIAL STUDENTS

Students over twenty-one years of age, even though they have not fulfilled the entrance requirements, may be admitted as special students, not in candidacy for a degree, to such studies as they are prepared to enter.

## IRREGULAR STUDENTS

Irregular students are those who have satisfied entrance requirements but are not pursuing a regular course in candidacy for a degree.

## SUBJECTS REQUIRED FOR ADMISSION

For the subjects, required or elective, for admission to the several colleges of the University, see the entrance requirements of these colleges.

## SUBJECTS ACCEPTED FOR ADMISSION

The subjects from which choice may be made, and the number of units which will be accepted in each subject, are as follows:

English .....	3 or 4 units
History, Social Sciences and Civics (not more than 4 units in all)	
Adv. U. S. History.....	$\frac{1}{2}$ or 1 unit
English History .....	$\frac{1}{2}$ or 1 unit
General History .....	1 unit
Ancient History .....	1 unit
Med. and Mod. History .....	1 unit
Civics .....	$\frac{1}{2}$ unit
Political Economy .....	$\frac{1}{2}$ unit



## Languages, Foreign (not more than 6 units in all)

French .....	1	to 4	units
German .....	1	to 4	units
Greek .....	1	or 2	units
Latin .....	1	to 4	units
Spanish .....	1	or 2	units

Mathematics ( $2\frac{1}{2}$  to 4 units)

Algebra .....	1	to 2	units
Geometry, Plane .....		1	unit
Geometry, Solid .....		$\frac{1}{2}$	unit
Trigonometry .....		$\frac{1}{2}$	unit

## Science (not more than 4 units in all)

Botany .....	$\frac{1}{2}$	or 1	unit
Chemistry .....		1	unit
General Science .....		1	unit
Physics .....		1	unit
Physiography .....	$\frac{1}{2}$	or 1	unit
Physiology .....		$\frac{1}{2}$	unit
Zoology .....	$\frac{1}{2}$	or 1	unit

## Vocational Subjects (not more than 3 units in all)

Agriculture .....	$\frac{1}{2}$	or 1	unit
Commercial Subjects .....	1	to 3	units
Domestic Science .....	1	to 3	units
Manual Arts .....	1	to 3	units

## ENTRANCE AT MID-YEAR

Students graduating from high school at mid-year may enter any classes in first year work not already filled to capacity, subject to scholarship requirements already stated.

At the beginning of the following fall the student will be assigned to the regular freshman work of one of the courses and can pursue his studies without irregularity.

## PSYCHOLOGICAL TESTS

Psychological tests are given to new students at the beginning of each semester to aid in determining the amount of work students should be permitted to carry, in advising the amount of outside work students may undertake, in deciding the dismissal or suspension of students, in considering the reinstatement of suspended students, in appointing student assistants, in determining the admission of students to certain advanced courses, and in sectioning classes.

All new students including specials are required to take the psychological tests unless excused by the Dean.

All seniors are given opportunity to take psychological tests during the week of their final examinations with the understanding that each senior who takes these tests will be given a complete statement of grades made in all psychological tests taken during his college course.

## EMPLOYMENT AND LIVING CONDITIONS

### THE BUREAU OF STUDENT EMPLOYMENT

This bureau is established for the purpose of aiding self-supporting students in finding part-time work during the school year. Its organization is directed by the University and its services are free to all students.

### LIVING CONDITIONS

The University maintains no dormitories, but lists of rooms for men may be found at the general office. All women attending the University are under direct charge of the Dean of Women. No non-resident woman is allowed to select a rooming place not on the approved list of the Dean of Women. Non-resident women intending to enter the University should write beforehand to Mrs. E. A. Thompson, Dean of Women, who will gladly assist them in obtaining suitable living quarters.

Board may be secured in private families (often in connection with room), in boarding houses near by or at the Y. M. C. A. and Y. W. C. A.

The School of Home Economics serves a cafeteria luncheon in Curtis Cottage every noon during the school year.

### SELF HELP

A large proportion of the men of the institution are self-supporting. Akron offers a great variety of work for men students. The University maintains a Bureau of Student Employment which helps new students in getting work for odd hours, evenings and on Saturdays. The demand for such student aid on the part of Akron citizens is usually larger than the University can supply.

No student, however, should enter without sufficient money for payment of term bills and for living expenses for several months, since too much outside work often seriously hampers the beginning of a college course.

The opportunity for women in the matter of self help is more limited. It consists largely of work during certain hours of the day in private families in return for board and room, clerking, and, to a limited extent, work in offices or libraries.

The University offers a number of student assistantships in various departments to upper classmen. Such positions pay thirty-five cents per hour for time spent. All inquiries regarding self help for men should be addressed to the Bureau of Student Aid; for women, to the Dean of Women.

## FEES AND EXPENSES

### TUITION

(Rules adopted January 12, 1926).

Citizens of the City of Akron shall not be charged tuition in any school or department of the University.

In applying this rule, the following persons, if citizens of the United States, shall be deemed to be citizens of Akron unless the circumstances of any particular case may show the fact to be otherwise, viz :

1. Any unmarried person under twenty-one years of age living within the City of Akron with his parents, if Akron is the place of domicile of such parents, or with his legal guardian, if Akron is the place of domicile of such guardian.
2. Any unmarried person over twenty-one years of age who, at the time of becoming twenty-one, was living within the city of Akron with his parents (or legal guardian), if Akron was the place of domicile of such parents (or guardian), and who has resided in Akron continuously since becoming twenty-one years of age.
3. An unmarried person who has resided in the city of Akron continuously for one year or more immediately prior to enrolling in the University, and who has chosen Akron as the place of his domicile.
4. A husband living with his wife, or a wife living with her husband, within the city of Akron, when such husband and wife have chosen Akron as the place of their domicile.

In every other case the burden of proving citizenship in the city of Akron shall rest with the person claiming the right of free tuition.

Any person enjoying the right of free tuition shall forfeit the right upon abandoning the city of Akron as his place of domicile, but may regain the right upon re-establishing his domicile in Akron.

Any person living outside of Akron but owning property within the city of Akron, which is taxed, may receive credit on tuition of his child or children during any semester to the extent of taxes actually paid by him for that half-year towards the University levy, upon presenting a certificate from the County Auditor or Treasurer, stating the amount so paid.

## FEES

All fees are payable at the Secretary's office before the student enters classes.

A fee of \$1.00 will be charged students who have not completed registration, classification and payment of fees before the class work of the school in which they are registered begins.

After a student has been classified a charge of \$1.00 will be made for any change in his program which is not made at the instance of the University authorities.

A fee of \$1.00 per subject with a maximum of \$5.00 will be charged for entrance examinations taken on days other than those specified in the catalog, and a fee of \$5.00 will be charged for each examination in college work not taken in course.

All students, both resident and non-resident, are required to pay a maintenance fee covering registration and incidentals. An advance deposit of \$5.00 on the maintenance fee is required of all new students at the time of registering. This fee will be applied on fees at entrance.

All students taking a total of eight semester hours or more in one or more schools of the University are required to pay the student activities fee.

All students graduating from the University are required to pay a graduation fee, payable at least one week before graduation.

Fees to cover breakage and materials are charged to all students taking laboratory courses.

## REFUNDS

Tuition and fees are not returnable, except for withdrawal on account of sickness (when doctor's certificate may be required) or other cause entirely beyond the control of the student.

No refunds will be made of late registration fees, transfer fees, examination fees nor advance deposit, if student is eligible to enter University.

To be entitled to refund, certain statements are required which may be learned at the Secretary's office.

Fees paid for evening courses offered but not given will be refunded.

Advance deposit will be refunded if student is not eligible to enter the University.

To entitle a student withdrawing from the University, to any refund on account of Athletic ticket, the entire ticket must be returned, when full amount paid for it will be refunded.



When students are entitled to other refunds, the University will retain a proportion as stated below and return to the student the balance paid:

*First and Second Semesters:*

TIME OF WITHDRAWAL	AMOUNT RETAINED BY UNIVERSITY
Before entering classes	\$2.50 of evening session fees and \$5.00 of day session fees.
During 1st or 2nd weeks,	20% of semester charge
“ 3rd “ 4th “	40% “ “ “
“ 5th “ 6th “	60% “ “ “
“ 7th “ 8th “	80% “ “ “
After 8th week	Full amount paid.

### SUMMARY OF FEES

The following tables give a summary of all University fees per semester:

#### TUITION FEES

For residents of Akron, all schools.....Free

For non-residents:

College of Engineering and Commerce, co-operative students  
First and second semesters, each.....\$60.00  
Summer session ..... 25.00

College of Liberal Arts, School of Home Economics, Teachers College, and full-time students in the College of Engineering and Commerce, per semester:  
For 8 hours or more.....\$90.00  
For less than 8 hours, per hour..... 10.00

Evening Session

4 credit hours or less.....Free  
5 credit hours or more, \$10.00 per hour per semester  
for each hour in excess of four, but in no case to  
exceed \$90.00 per semester

Summer Session .....Free

#### MAINTENANCE FEE

Summer Session, per semester hour.....\$ 4.00  
Smith-Hughes Law vocational courses, each..... 2.50

All other schools of the University:

For 1 or 2 credit hours..... 10.00  
For 3 credit hours..... 14.00  
For 4 credit hours..... 18.00  
For 5 credit hours..... 20.00  
For 6 credit hours..... 22.00  
For 7 credit hours..... 24.00  
For 8 credit hours, or more..... 25.00

\$2.50 of the maintenance fee paid by each student, except in summer session and Smith-Hughes subjects, shall be considered a registration fee.

## STUDENT ACTIVITIES FEE

To each student taking 8 credit hours or more:

First semester (including a student athletic ticket for the entire school year) .....	\$ 8.00
Second semester, to students in school the preceding semester .....	3.00
Second semester, to new entrants (including student athletic ticket) .....	5.50

## GRADUATION FEE

Bachelor's degree .....	\$ 5.00
Master's degree .....	10.00

## LABORATORY FEES

All laboratory fees are payable strictly in advance before entering classes:

Bacteriology, deposit for breakage.....	\$ 5.00
Biology 403, 404, 419, 420, per semester, each.....	4.00
Biology 401, 402, per semester.....	2.50
Biology 411, 423, 424, per semester hour, each.....	1.00
Elementary Microbiology .....	1.00
Cement Laboratory 861, per semester.....	2.00
Chemistry 353, 354, per semester, each.....	3.00
Chemistry, all other courses, each.....	4.00
Chemistry 741, 742, per semester, each.....	3.00
*Chemistry, deposit for breakage in each course.....	5.00
*Deposit for breakage (each co-operative student, per year).....	5.00
Dietetics, per semester .....	7.50
Educational Measurements .....	2.00
Electrical Laboratory 907, 908, 913, 914, 922, 961, 962, per semester .....	3.00
Engineering Laboratory 721, per semester .....	3.00
Foods, per semester .....	7.00
Foods, per semester (evening session).....	3.75
Housewives Class, per semester .....	4.00
Materials Laboratory 817, per semester .....	2.00
Mechanical Laboratory, 752, 753, 764, per semester.....	3.00
Metallurgy 744, per semester .....	4.00
Physics 331, 332, each .....	2.50
Physics, advanced courses, per semester hour, each.....	2.00
Physics 679, 683, per semester, each.....	2.00
Railroads 853 .....	1.00
Research problems (Teachers College), per semester.....	5.00
†R. O. T. C. deposit for uniform (advanced course).....	10.00
Surveying 810, per semester .....	2.00
Table and Meal Service, per semester .....	6.00
Thesis, Teachers College .....	10.00

\*The unused portion of the breakage deposit will be returned to the student.

†This deposit is returned only to students who complete a full year's work.

## COLLEGE OF ENGINEERING AND COMMERCE

FRED E. AYER, C. E., *Dean*

### GENERAL INFORMATION

The Directors of the Municipal University of Akron established the College of Engineering in 1914, and adopted the five-year co-operative course patterned after the "Cincinnati Plan."

In 1921 the Department of Commerce and Administration became a department of the Engineering College and the name of the latter was changed to the College of Engineering and Commerce. Business training students enrolled previous to 1923 will continue on full time; all other students must do outside work.

The "Cincinnati Plan" aims to give the student a thorough training in both theory and practice by requiring the practice to be learned under actual commercial conditions in local industrial and business organizations, and the underlying science to be studied in the University under trained educators. To accomplish this the students are grouped in two sections, one of which is at work and the other in attendance at the University. For example, A who is in section one, attends classes at the University for three weeks while B, who is paired with A and who is in section two, is at work. Then they change places, and B attends the University for three weeks while A is at work. Of course this necessitates the giving of all University work twice—once for each section.

Five years of eleven months each are required to complete the course, each student being allowed a vacation of one week at Christmas time, one week at Easter or during commencement week, and two weeks in the latter part of the summer.

Candidates for admission are required to spend the summer preceding their entrance at continuous work on a job provided by the University. This probationary period affords the student an opportunity to test his fitness and liking for the course, and demonstrates his ability to satisfy his employer.

While a student is at work he is subject to all rules and regulations imposed by his employer upon the other employees. All existing labor laws and conditions, including those pertaining to liability for accident, apply to the student in the same way as to any other employee.

In order to operate a co-operative course, the college must be located in or near an industrial center, and, while there are over six hundred colleges and universities in the United States, yet comparatively few of them are so located that such a course is practicable. Akron is essentially

a manufacturing center, and the President and Directors of the Municipal University of Akron selected this type of vocational education as being the latest and the one best adapted to the city's needs; therefore no other courses in Engineering and Commerce are offered.

## INDUSTRIAL ENGINEERING

This co-operative course, which was provided for those who wished to take up the business side of engineering activity, is discontinued. Students now enrolled in the course will be permitted to complete their work and graduate. The new co-operative commercial course seems to meet the needs of students desiring to enter this field. It is possible for students in the commercial course interested in engineering to elect some engineering subjects.

## SECRETARIAL COURSE

An important new course of interest to high school graduates has been introduced into the Municipal University of Akron. This course is intended for men and women desiring to prepare themselves as private secretaries and heads of office departments. In addition to the required subjects, students must choose 14 hours of elective work during the four years.

This Secretarial Course is divided into two parts. To those completing the first two years a certificate of proficiency for such work will be given. For those completing the full four years (and all are advised to do so) a B. S. in Secretarial Science degree will be granted.

This course is based on similar courses as given in the best universities in the United States and is deemed strengthened by the addition of Sociology and Government. The course as here outlined is tentative and may be changed subject to the needs of business.

Students will be required to attain a high degree of proficiency in typewriting and shorthand. This work must be taken outside the regular college course. Young men will be expected to meet the requirements of the R. O. T. C.

## OUTSIDE WORK

The Department of Co-ordination and the employer so plan the work that the student gets a carefully graded training beginning with work requiring no skill or experience and ending with actual professional work.

The outside work and courses of study are co-ordinated by technically trained men experienced in professional practice. Throughout the five years of University work they will give courses whose aim is two-fold. First, they supplement the outside training by explaining the different operations, the sequence of work, the technicalities of the machine, and, in short, any part of the work which the student does not understand, and which the foreman has not time to explain. This



shows the student the vast educational opportunities open to him in his outside work and makes him more useful to his employer.

Secondly, these courses cover the field of business, factory organization, and cost accounting, routing of work for efficient production, study of the conditions leading to maximum production, and the influence of work environment. The instruction given in all the courses is carefully planned to develop in each student the power of observation and the ability to analyze the problems arising in his work.

The outside work, properly co-ordinated with University training, furnishes a large part of the technical detail required in professional subjects.

### WAGES

The primary object of requiring outside work is to give the student practical experience and not to enable him to earn money. In most cases the student's earnings are not sufficient to pay his expenses.

Engineering and Commerce students are paid for their outside work the same as other employees. Beginners are paid a little more than apprentices and are increased according to a rate agreed upon by the employer and the Department of Co-ordination. Students are paid only for the time actually employed, and receive their wages direct, as does any other employee.

### DEGREES

The degrees of Civil Engineer, Mechanical Engineer, Electrical Engineer, B. S. in Commerce and Administration, and B. S. in Secretarial Science will be given to those students who satisfactorily complete the required work. In addition to his diploma, each student will receive a certificate showing in detail his practical experience.

### MILITARY TRAINING

Military training under the direct supervision of the United States Government is required of all male students physically fit. Men entering the College of Engineering and Commerce are exempt only if they have been two years in attendance at another institution of collegiate grade. It takes two years to complete the basic course on the co-operative or part-time plan. All freshmen are urged to attend the basic camp at the end of the freshman year. Satisfactory arrangements have been made in the summer school for such attendance.

### ADMISSION

The following supplements the statement of general entrance requirements made on introductory pages.

Candidates for admission must be at least sixteen years of age, and must present fifteen units of secondary school work. Students will be admitted with entrance conditions amounting to not more than one unit. Such conditions must be removed during the freshman year.

Application blanks properly filled out and entrance credits must be submitted prior to July 1.

## ENTRANCE REQUIREMENTS

The following supplements the statement of general entrance requirements made on introductory pages.

The requirement for unconditional entrance is 15 units.

The specific requirements for entrance to this college are as follows:

English .....	3 units
*Mathematics (Algebra $1\frac{1}{2}$ , Pl. Geom. 1) .....	$2\frac{1}{2}$ units
*Solid Geometry (engineering students) .....	$\frac{1}{2}$ unit
*American History and Civics .....	1 unit
Science (must include laboratory work) .....	1 unit
*Foreign Language .....	2 units
Electives (not more than three units in vocational subjects) .....	5 or $5\frac{1}{2}$ units

## ESTIMATED EXPENSE OF FRESHMAN YEAR

### FIRST SEMESTER

	Resident	Non-Resident
Tuition .....	Free	\$ 60.00
Fees .....	\$38.00	38.00
Books and Drawing Instruments .....	40.00	40.00
Total .....	\$78.00	\$138.00

### SECOND SEMESTER

	Resident	Non-Resident
Tuition .....	Free	\$ 60.00
Fees .....	\$33.00	33.00
Books .....	8.00	8.00
Total .....	\$41.00	\$101.00

### SUMMER TERM

	Resident	Non-Resident
Tuition .....	Free	\$ 25.00
Fees .....	\$ 2.00	2.00
Books .....	5.00	5.00
Total .....	\$ 7.00	\$32.00

Board and room can be obtained for approximately \$10.00 per week.

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\*Students who enter with a condition in solid geometry must remove it by the end of the freshman year. One unit of algebra and one unit of Pl. Geometry are required for admission to Commerce course. Students who enter conditioned in foreign language must remove such conditions before graduation.

## MECHANICAL ENGINEERING 1926-1927

### FRESHMAN YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
Military Training .....	2	Military Training .....	2
Physical Training .....	1	Physical Training .....	1
Mathematics 650 .....	6	Mathematics 651 .....	6
Drawing 727 .....	4	Drawing 728 .....	4
Physics 679 .....	5	Physics 680 .....	5
Engineering Laboratory 721 .....	4	Engineering Laboratory 721 .....	4
Co-ordination 700-702 .....	2	Co-ordination 701-703 .....	2

#### SUMMER TERM

Mathematics .....	6
Surveying 810 .....	16

### SOPHOMORE YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
Military Training .....	2	Military Training .....	2
Physical Training .....	1	Physical Training .....	1
Mathematics 652 .....	6	Mathematics 653 .....	6
Physics 681 .....	6	Physics 682 .....	6
Descriptive Geometry 729 .....	4	Heat Engineering 742 .....	5
Co-ordination 704 .....	1	Co-ordination 705 .....	1

#### SUMMER TERM

Mathematics 654 .....	6
Machine Drawing 730 .....	12
Mechanical Engineering Laboratory 752 .....	4

### PRE-JUNIOR YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
Mathematics 655 .....	3	Mathematics 656 .....	3
Chemistry 689 .....	8	Chemistry 690 .....	8
Physics 683 .....	5	Strength of Materials 837 .....	6
Mechanism 733 .....	5	Materials Laboratory 817 .....	4
Mechanism Drawing 735 .....	2	Gas and Oil Engines 762 .....	3

#### SUMMER TERM

Chemistry of Combustion 691 .....	6
Hygiene and Sanitation 695 .....	16

### JUNIOR YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
Steam Power Plants 763 .....	4	Steam Power Plants 764 .....	4
Metallurgy 692 .....	6	Machine Design 736 .....	6
D. C. Electricity 905 .....	6	A. C. Electricity 906 .....	6
D. C. Laboratory 907 .....	4	A. C. Laboratory 908 .....	4
English Composition 660 .....	4	English Composition 661 .....	4

#### SUMMER TERM

Machine Design 737 .....	12
Mechanical Engineering Laboratory 753 .....	10

### SENIOR YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
Heating and Ventilation 765 .....	4	Thermodynamics 744 .....	5
Hydraulics 747 .....	6	Economics 688 .....	6
Economics 687 .....	6	Business Administration 1037C .....	6
Accounting 1063C .....	6	English Literature 665 .....	2
English Literature 664 .....	2	Elective .....	5

## CIVIL ENGINEERING

1926-1927

## FRESHMAN YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
Military Training .....	2	Military Training .....	2
Physical Training .....	1	Physical Training .....	1
Mathematics 650 .....	6	Mathematics 651 .....	6
Drawing 727 .....	4	Drawing 728 .....	4
Physics 679 .....	5	Physics 680 .....	5
Engineering Laboratory 721 .....	4	Engineering Laboratory 721 .....	4
Co-ordination 700-706 .....	2	Co-ordination 701-707 .....	2

## SUMMER TERM

Mathematics .....	6
Surveying 810 .....	16

## SOPHOMORE YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
Military Training .....	2	Military Training .....	2
Physical Training .....	1	Physical Training .....	1
Mathematics 652 .....	6	Mathematics 653 .....	6
Physics 681 .....	6	Physics 682 .....	6
Descriptive Geometry 729 .....	4	Heat Engineering 742 .....	5
Co-ordination 708 .....	1	Co-ordination 709 .....	1

## SUMMER TERM

Machine Drawing .....	12
Mathematics 654 .....	6
Mechanical Engineering Laboratory 752 .....	4

## PRE-JUNIOR YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
Chemistry 689 .....	8	Chemistry 690 .....	8
Mathematics 655 .....	3	Mathematics 656 .....	3
Physics 683 .....	5	Strength of Materials 837 .....	6
Roofs and Bridges 851 .....	6	Materials Laboratory 817 .....	4

## SUMMER TERM

Railroads 853 .....	10
Reinforced Concrete 873 .....	8
Cement Testing 861 .....	4

## JUNIOR YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
English Composition 660 .....	4	English Composition 661 .....	4
Hydraulics 747 .....	6	Highways 856 .....	4
D. C. Theory 905 .....	6	A. C. Theory 906 .....	6
D. C. Laboratory 907 .....	4	A. C. Laboratory 908 .....	4
Concrete Design 879 .....	6	Steel Design 874 .....	6

## SUMMER TERM

Hygiene and Sanitation 695 .....	16
Geology 872 .....	6

## SENIOR YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
Accounting 1063C .....	6	Business Administration 1037C .....	6
Sewerage 881 .....	6	Water Supply 882 .....	6
Economics 687 .....	6	Economics 688 .....	6
Engineering Design 883 .....	2	Engineering Design 884 .....	2
English Literature 664 .....	2	English Literature 665 .....	2



## ELECTRICAL ENGINEERING

1926-1927

## FRESHMAN YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
Military Training .....	2	Military Training .....	2
Physical Training .....	1	Physical Training .....	1
Mathematics 650 .....	6	Mathematics 651 .....	6
Drawing 727 .....	4	Drawing 728 .....	4
Physics 679 .....	5	Physics 680 .....	5
Engineering Laboratory 721 .....	4	Engineering Laboratory 721 .....	4
Co-ordination 700-710 .....	2	Co-ordination 701-711 .....	2
SUMMER TERM			
Mathematics .....			6
Surveying 810 .....			16

## SOPHOMORE YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
Military Training .....	2	Military Training .....	2
Physical Training .....	1	Physical Training .....	1
Mathematics 652 .....	6	Mathematics 653 .....	6
Physics 681 .....	6	Physics 682 .....	6
Descriptive Geometry 729 .....	4	Heat Engineering 742 .....	5
Co-ordination 712 .....	1	Co-ordination 713 .....	1
SUMMER TERM			
Mathematics 654 .....			6
Machine Drawing 730 .....			12
Mechanical Engineering Laboratory 752 .....			4

## PRE-JUNIOR YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
Mathematics 655 .....	3	Mathematics 656 .....	3
Chemistry 689 .....	8	Chemistry 690 .....	8
English Composition 660 .....	4	English Composition 661 .....	4
D. C. Theory 905 .....	6	A. C. Theory 906 .....	6
D. C. Laboratory 907 .....	4	A. C. Laboratory 908 .....	4
SUMMER TERM			
Hygiene and Sanitation 695 .....			16
Chemistry of Combustion 691 .....			6

## JUNIOR YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
Economics 687 .....	6	Economics 688 .....	6
Advanced Electrical Theory 911 .....	5	Advanced Electrical Theory 912 .....	5
Advanced Electrical Laboratory .....		Advanced Electrical Laboratory .....	
913 .....	2	914 .....	4
Physics 683 .....	5	Strength of Materials 837 .....	6
Metallurgy 692 .....	6	Materials Laboratory 817 .....	4
SUMMER TERM			
Advanced Electrical Theory 920 .....			14
Advanced Electrical Laboratory 922 .....			8

## SENIOR YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
Hydraulics 747 .....	6	Thermodynamics 744 .....	5
Electric Power Transmission .....		Electric Railways 952 .....	5
941 .....	4	Special Electrical Problems 962 .....	6
Special Electrical Problems 961 .....	6	Business Administration 1037C .....	6
Accounting 1063C .....	6	English Literature 665 .....	2
English Literature 664 .....	2		

## INDUSTRIAL ENGINEERING

1926-1927

(Discontinued except for those already in Course)

## SENIOR YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
Elementary Law 1039C .....	6	Business Law 1047C .....	6
Cost Accounting 1051C .....	6	Cost Accounting 1052C .....	6
Industrial and Business Economics 1029C .....	6	Business Administration 1037C.....	6
Thesis 1065C .....	4	Thesis 1066C .....	4

## COMMERCE AND ADMINISTRATION

(Co-operative)

1926-1927

## FRESHMAN YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
*Military Training .....	2	*Military Training .....	2
Physical Training .....	1	Physical Training .....	1
Mathematics 658 .....	6	Mathematics 659 .....	6
Drawing 727 .....	4	Industrial and Commercial Geography 1019C .....	6
Accounting 1027C .....	6	Accounting 1028C .....	6
Co-ordination 700-714 .....	2	Co-ordination 701-715 .....	2

## SUMMER TERM

Economic Development of United States and England 1021C.....	22
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## SOPHOMORE YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
*Military Training .....	2	*Military Training .....	2
Physical Training .....	1	Physical Training .....	1
Economics 687 .....	6	Economics 688 .....	6
Modern Language 671 .....	6	Modern Language 672 .....	6
English Composition 662 .....	5	English Composition 663 .....	5
Co-ordination 716 .....	1	Co-ordination 717 .....	1

## SUMMER TERM

Railroads and Traffic Problems 1049C .....	22
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## PRE-JUNIOR YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
English 63 .....	3	English 64 .....	3
Business Finance 1035 .....	3	Federal Reserve System and Money Policies 1069C .....	3
Money and Banking 1045 .....	3	Statistics 1040 .....	3
Modern Language 673 .....	3	Modern Language 674 .....	3
Science .....	4	Science .....	4

## SUMMER TERM

Markets, Domestic Commerce 1043 .....	11
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## JUNIOR YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
Psychology 201 .....	3	Psychology 202 .....	3
Salesmanship 1061 .....	3	Foreign Commerce 1053 .....	2
History or Gov. ....	3	Advertising 1060 .....	2
Advanced Accounting 1067 .....	3	Accounting Problems 1068 .....	3

## SUMMER SEMESTER

Electives .....	11
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\*For Men only.

## COMMERCE AND ADMINISTRATION

(Full Time—Discontinued except for those already in course)

## SENIOR YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
Government or Sociology .....	3	Government or Sociology .....	3
Cost Accounting 1051 .....	2	Cost Accounting 1052 .....	2
Foreign Commerce 1053 .....	2	Industrial and Business	
Markets, Domestic Commerce 1043 .....	3	Problems 1055 .....	2
Electives .....	3	Business Administration 1037 .....	3
Thesis 1065 .....	2	Advertising 1060 .....	2
		Thesis 1066 .....	2

## SECRETARIAL COURSE

1926-1927

## FIRST YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
Business English .....	3	Business English .....	3
Secretarial Duties and		Business Mathematics 1024 .....	3
Ethics 1023 .....	3	Filing and Charting .....	3
Chemistry or Biology .....	4	Chemistry or Biology .....	4
Industrial and Com. Geography		Economic Development of	
1019 .....	3	U. S. 1021 .....	3
Physical Training .....	1	Physical Training .....	1
R. O. T. C. ....	2	R. O. T. C. ....	2

## SECOND YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
Accounting 1027 .....	3	Accounting 1028 .....	3
Economics 451 .....	3	Economics 452 .....	3
English 63 .....	3	English 64 .....	3
Spanish 171 (at least two years		Spanish 172 .....	4
of modern lang.) .....	4	Physical Training .....	1
Physical Training .....	1	R. O. T. C. ....	2
R. O. T. C. ....	2		

## THIRD YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
English .....	3	English .....	3
Money and Banking 1045 .....	3	History or Gov't .....	3
Indexing and Filing 1031 .....	3	Business Correspondence and	
Psychology 201 .....	3	Secretarial Practice 1032 .....	2
Spanish 173 .....	3	Psychology 202 .....	3
Electives .....	3	Spanish 174 .....	3
		Statistics 1040 .....	3

## FOURTH YEAR

First Semester	Cr. Hrs.	Second Semester	Cr. Hrs.
Business Finance 1035 .....	3	Business Administration 1037 .....	3
Office Practice 1041 .....	3	Office Practice 1042 .....	3
History or Government .....	3	History or Government .....	3
Sociology 213 .....	3	Sociology 214 .....	3
Thesis 1065 .....	2	Thesis 1066 .....	2
Electives .....	3	Business Law 1047 .....	3

## DEPARTMENTS OF INSTRUCTION

The general system of numbering and arrangement is according to the following order:

Subject	Course Number
Biology .....	695- 698
Chemistry .....	689- 694
Civil Engineering .....	800- 899
Commerce .....	1000-1099
Co-ordination .....	700- 719
Economics .....	687- 688
Electrical Engineering .....	900- 999
English .....	660- 670
Mathematics .....	650- 659
Mechanical Engineering .....	720- 799
Physics .....	679- 686
Spanish .....	671- 678

## COURSES FOR 1926-1927

## BIOLOGY

## ASSISTANT PROFESSOR KRAATZ

695. HYGIENE AND SANITATION. Summer term. Sixteen credit hours.

Two hours of lecture or recitation, and daily, three hours of laboratory work and two hours of assigned reading, on Monday, Wednesday, and Friday.

This is a rapid survey of the fundamental laws and principles of biology, followed by a more detailed study of selected problems in nutrition, personal hygiene, first aid, sanitation, and public health. This course extends through four weeks.

ASSISTANT PROFESSOR KRAATZ

## CHEMISTRY

## MR. SCHAEFER, MR. ANDERSON

689-690. ENGINEERING CHEMISTRY. First and second semesters.

Eight credit hours each semester. Four recitations and eight laboratory hours per week.

A study of the fundamental principles and theories of chemistry. The second semester is a systematic study of the properties of the elements and their compounds. The laboratory work for both semesters consists mainly of the preparation of compounds with some supplementary experiments.

MR. ANDERSON



691. **FUELS.** Summer term. Six credit hours. Five recitations and four laboratory hours each week.

Lectures, recitations and problems on solid, liquid and gaseous fuels, their use, efficiencies and the thermo chemistry of combustion. Laboratory work on calorimetry, flue and fuel gas analysis.

692. **METALLURGY OF IRON AND STEEL.** First semester. Six credit hours. Four recitations and four laboratory hours per week.

Recitations and lectures on the manufacture, properties and uses of iron and steel. Laboratory work in heat-treating of steel and microscopic examination of metals and alloys.

MR. SCHAEFER

## CIVIL ENGINEERING

PROFESSOR DURST, ASSISTANT PROFESSOR BULGER

810. **SURVEYING.** Summer term. Sixteen credit hours.

This course consists of the surveying and computation of areas, tests and adjustments of instruments, stadia and plane table work and contour mapping. At least one Polaris observation is made. Most of the work is done away from the campus. Prerequisite 721. PROFESSOR DURST

817. **MATERIALS LABORATORY.** Second semester. Four credit hours.

Steel is tested in compression, tension and torsion. Compression tests of brick, concrete, wood, and cast iron are made. Beams of steel and wood are tested and the deflections measured. A 100,000-pound Riehle Universal Testing Machine and a 60,000-inch-pound Riehle Torsion Machine with needed extensometers and strain gauges are used in making the tests. Prerequisite 837.

ASSISTANT PROFESSOR BULGER

837. **STRENGTH OF MATERIALS.** Second semester. Six credit hours.

Class room work is given in tensile, compressive, and shearing stresses, riveted joints, torsion, bending moments, stresses and deflections of beams. A study is made of end conditions and formulas for columns. Text: Poorman. Prerequisites, Physics and Calculus.

ASSISTANT PROFESSOR BULGER

851. **ROOFS AND BRIDGES.** First semester. Six credit hours.

The calculation of stresses in several types of roof trusses for dead, snow, and wind loads are made analytically and checked by graphics. Stresses are calculated for several bridge trusses under dead and live loads. Text: Johnson-Bryan-Turneure.

ASSISTANT PROFESSOR BULGER

853. **RAILROADS.** Summer term. Ten credit hours.

An intensive course in railroad construction and surveying is given. This includes field and office work in simple compound, and spiral curves. Prerequisite 810.

PROFESSOR DURST

856. HIGHWAYS. Second semester. Four credit hours.

A study is made of the construction, cost, and advantages of the various types of hard surfaced highways. City paving and street designing are also considered. Traffic is studied by the use of traffic census. Bituminous material is tested. Text: Agg's Roads and Pavements.

PROFESSOR DURST

861. CEMENT TESTING. Summer term. Four credit hours.

The standard laboratory tests on cement, sand, and concrete are conducted in accordance with the A. S. T. M. standards. Experimental investigations are made. A trip is made to a cement plant where the actual manufacture of cement is studied.

PROFESSOR DURST

872. ENGINEERING GEOLOGY. Summer term. Six credit hours.

This course consists of a survey of the essential facts of dynamic, structural, and economic geology. The relation of geology to the engineer and his work is kept constantly in mind. The class room work is supplemented by an excellent collection of Ward's minerals, rocks, coals, etc., and by several inspection trips. Text: Ries and Watson.

PROFESSOR DURST

873. REINFORCED CONCRETE. Summer term. Eight credit hours.

Instruction is given in the properties of plain and reinforced concrete, the design of mixtures, and the theory of stresses in reinforced concrete. Practice is given in the design of beams and columns. Prerequisite 837.

ASSISTANT PROFESSOR BULGER

874. STEEL DESIGN. Second semester. Six credit hours.

Practice is given in designing and computing costs of steel structures such as mill and office buildings, warehouses, and bridges. Prerequisite 837. Text: Ketchum's Structural Engineers Hand Book.

ASSISTANT PROFESSOR BULGER

879. CONCRETE DESIGN. First semester. Six credit hours.

Practice is given in designing various concrete structures such as buildings, beam and arch bridges, retaining walls, and chimneys. Text: Hool and Johnson. Prerequisite 873. ASSISTANT PROFESSOR BULGER

881. SEWERAGE. First semester. Six credit hours.

Part. I. Sewer Design. After some class room study and discussion, each student is required to design a complete sewer system for some district in Akron, or for an adjoining town.

Part II. Sewage Disposal. This consists of a comparative study of the various types of sewage treatment plants and several plants are visited. Text: Metcalf and Eddy. Prerequisite Hydraulics.

PROFESSOR DURST

882. **WATER SUPPLY.** Second semester. Six credit hours.

After a review of formulae, methods, and practice, each student is required to design a complete water system for a portion of Akron or a nearby town. An inspection trip to Akron Pumping Station and Treatment Plant at Kent is arranged once a year. Text: Folwell. Prerequisite, Hydraulics. PROFESSOR DURST

883-884. **ENGINEERING DESIGN.** First and second semester. Two credit hours each semester.

Special problems in design are selected. This course gives the student an opportunity to do extra work along the particular line in which he wishes to specialize. ASSISTANT PROFESSOR BULGER

## COMMERCE AND ADMINISTRATION

PROFESSOR McDERMOTT, MR. MARSH, MR. PORTER, MR. COOK

1019-1019C. **INDUSTRIAL AND COMMERCIAL GEOGRAPHY.** Second semester. Three credit hours for full time students. Six credit hours for co-operative students.

This course makes a study of the growth and factors of commerce and industry, the important industries of the United States, physical features of the world in their relation to the development of commerce and industry, mineral industries and their relation to the development of the state, centers of great industries, transportation, communication, relation of government to industry and trade, foreign commerce of the United States and all other important countries of the world. MR. MARSH

1021-1021C. **ECONOMIC DEVELOPMENT OF THE UNITED STATES.** Summer term. Twenty-two credit hours. Second semester. Three credit hours for full time students.

This course studies the development of colonial industry and makes a careful survey of the industrial history of England, early trade restrictions, availability of the resources of the United States and their developments, movement of trade and industry in the early history of the country as well as present movements, effect of trade and tariff on industry, labor movements, and the development of the labor union, and our modern industries and their development. MR. MARSH

1023. **SECRETARIAL DUTIES AND ETHICS.** First semester. Three credit hours. Full time.

This course will consider the origin and history of the modern secretary; education and development of the private secretary of the modern business man; what a position as secretary means to the outside world; how to learn the needs of the employer and his friends; the modern office, office appliances and mechanical devices as time savers; the duties of an office manager; wage system; methods of securing efficiency in the office; welfare work; letter writing; how to handle a caller.

PROFESSOR McDERMOTT AND OTHERS

1024. BUSINESS MATHEMATICS, FILING AND CHARTING. Second semester. Three credit hours. Full time.

Short cuts in business mathematics; business forms necessary for the secretary to know; familiarity with interest and annuity tables, present worth and partial payment and insurance rates; making of simple charts and graphs of most of the problems of the business man; filing of office papers, will be studied. PROFESSOR McDERMOTT AND OTHERS

1027-1028, 1027C-1028C. ACCOUNTING. First and second semesters. Three credit hours each semester for full-time students. Six credit hours for co-operative students.

This course includes the science of constructing systematic records of business transactions, a study of double-entry bookkeeping, critical examination of the typical factors in capital and revenue accounts, development of forms used in business, forms and records used in different industrial enterprises, many illustrative problems, and partnership and corporation accounting are completed. MR. PORTER, MR. MARSH

1031. INDEXING AND FILING. First semester. Three credit hours. Full time.

The modern business office, its filing cases and appliances; a more advanced course in filing for the big office; latest methods for short cuts in filing materials; visits to factories and lectures by practical men in charge of filing departments. Various systems for indexing; a practical course for those interested in this character of work.

PROFESSOR McDERMOTT AND OTHERS

1032. BUSINESS CORRESPONDENCE AND SECRETARIAL PRACTICE. Second semester. Three credit hours. Full time.

An advanced course in business letter writing; development of business forms necessary to modern business; the modern business letter and report from the business man's side; work of the secretary in making reports and schedules for the office; a practical course to meet the needs of modern business. Problems and visits to offices.

PROFESSOR McDERMOTT AND OTHERS

1035-1035C. BUSINESS FINANCE. First semester. Three credit hours for full time students. Six credit hours for co-operative students.

The subjects studied in this course are the relation of finance to business, the financial side of business administration, history and origin of financial transactions, introduction to banking practices, work of the banker, stocks and bonds, budgets and financial reports, financial standards, promotion, dividends, and reorganization. PROFESSOR McDERMOTT



1037-1037C. BUSINESS ADMINISTRATION. Second semester. Three credit hours for full time students. Six credit hours for co-operative students.

Origin and history of industrial and mercantile establishments, principles of organization, distribution of functions and the control of business, factors accounting for the location of industries, scientific management, its development and effect on the business of the modern world, labor unions and their relation to capital, job analysis, mental tests, and latest forms of welfare work are the problems of study in this course.

PROFESSOR McDERMOTT

1039-1039C. ELEMENTARY LAW. First semester. Three credit hours for full time students. Six credit hours for co-operative students.

The course is designed to cover the fundamental principles of American jurisprudence, outline and elements of statutory and common law and equity.

PROFESSOR McDERMOTT

1040-1040C. STATISTICS. Second semester. Three credit hours for full time students. Six credit hours for co-operative students.

Elementary principles of statistics as a means to scientific study and interpretation of the measurable phenomena of economic and social life are the chief problems of study in this course. Emphasis is laid upon the characteristics of statistical methods, sources and collections of statistical data, errors and approximation, classification and frequency distribution, averages, index numbers, and criteria of association, cause and effect.

MR. MARSH

1041-1042. OFFICE PRACTICE. First and second semester. Three credit hours each semester.

A study of the problems that come up in the work of the secretary, laboratory work in the application of the work of an office, practical experience in the offices of the administrative officers of the University, students' work in outside offices of the various industries of the city.

PROFESSOR McDERMOTT

1043-1043C. MARKETS, DOMESTIC COMMERCE. First semester for full time students. Three credit hours. Summer term for co-operative students. Twenty-two credit hours.

This course outlines the development of the early types of markets; early trade routes; fairs; location of colonial marketing centers; development of modern markets and the factors affecting their development; advertising and sales systems; co-operation, its development and importance; the middleman, his functions and problems; the future of the middleman; location of the wholesale centers of the United States; the retailer, the consumer, and modern problems of the buyer and seller.

PROFESSOR McDERMOTT

1045-1045C. **MONEY AND BANKING.** First semester. Three credit hours for full time students. Six credit hours for co-operative students.

Form and function of currency and credit; state and Federal laws of banking; Federal reserve banking system and its relation to the monetary system of the United States; a brief study of the history of our banking institutions, the fluctuations of the money market, note issue, and the Clearing House, a brief study of the banking systems of foreign countries and a comparison with the Federal Reserve System are the problems of study in this course.

MR. PORTER

1047-1047C. **BUSINESS LAW.** Second semester. Three credit hours for full time students. Six credit hours for co-operative students.

This course is an introduction to the customs and laws of trade, business, and finance; detailed study of contracts, bills and notes, bailments, agency, partnership, personal and real property; a study of the common carrier, insurance deeds, mortgages, wills, etc. Many cases are studied to show the application of law to business. The case system is used.

PROFESSOR McDERMOTT

1049-1049C. **RAILROADS AND TRAFFIC PROBLEMS.** Second semester. Three credit hours for full time students. Six credit hours for co-operative students.

Economic significance of modern development, organization and combination of railway systems; the development of the means of transportation; railway growth and consolidation; problems of railway traffic and rate making; rate theories and practice, legislative control, inland and coastwise commerce of the United States; railway commissions and public control; government ownership and its relation to the public are the topics of study in this course.

MR. MARSH

1051-1052, 1051C-1052C. **COST ACCOUNTING.** First and second semesters. Two credit hours each semester for full time students. Four credit hours each semester for co-operative students.

This course is designed to cover an exposition of the utility and methods of cost accounts; the problems, elements, and units of cost of various types of business, sources of cost data; measurements of direct costs; methods of apportioning and distributing overhead expenses; organization of cost systems; presentation and utilization of cost data; studies and reports of cost accounting systems. It makes a study of practical problems in local business and employs C. P. A. problems.

MR. PORTER

- 1053-1053C. FOREIGN COMMERCE. Second semester. Two credit hours for full time students. Four credit hours for co-operative students.

The subjects of study in this course are the development of early commerce and commercial nations; theory of international trade; volume and character of imports and exports; governmental regulation, consular service, commercial methods and regulations for trade; aids to the development of trade, position of the United States in the commercial world and our future needs.

PROFESSOR McDERMOTT

- 1055-1055C. INDUSTRIAL AND BUSINESS PROBLEMS. First semester. Two credit hours for full time students. Four credit hours for co-operative students.

This course consists of a study of economic and industrial problems of importance to the business man; the business cycle; the railway problem, nature and extent of regulation, rate making, government ownership; the problem of capitalistic monopoly; the study of population, economic insecurity, trade unions, social reform and legal institutions, taxation, and modern problems of business.

PROFESSOR McDERMOTT

- 1057-1058, 1057C-1058C. INDUSTRIES AND RESOURCES OF AKRON. First two credit hours for full time students. Four credit hours for co-operative students.

The subject of study in this course is the city of Akron as an industrial and commercial center; its railroads and water communications; the rubber industry, the products manufactured and exported; clay product industry; products and possibilities of the industry; motor truck industry; machine shops; cereal and other important industries. Visits to factories and reports on processes are emphasized.

PROFESSOR McDERMOTT

1060. ADVERTISING. Second semester. Two credit hours.

This is an introductory course in principles of advertising. It treats of the fields of advertising, how to write advertising, how to display advertising, where to publish advertising, and the operating side of advertising.

MR. COOK

1061. SALESMANSHIP. Second semester. Three credit hours.

This course discusses the role of salesmen in modern business; relation of salesmanship and advertising; analyzing the goods, the market and the customers for advertising and selling campaigns; construction of oral and written selling talks; conduct of selling campaigns; sales equipment, sales records and tests of efficiency; essential qualifications of a salesman in various types of manufacturing and wholesale and retail institutions; choosing, training, organizing and supervising salesmen; ethics of salesmanship.

PROFESSOR McDERMOTT

1063C. **MANAGERIAL ACCOUNTING.** First semester. Six credit hours. This course covers the forms that a foreman or a superintendent in a factory would use. It is not intended that senior civil, mechanical, or electrical engineers would become bookkeepers, but rather that they be able to interpret such forms as profit and loss statements, balance sheets, production statements, store records, etc. **MR. MARSH**

1065-1066, 1065C-1066C. **THESIS.** First and second semesters. Two credit hours each semester for full time students. Four credit hours each semester for co-operative students.

This is a course designed to develop the student along original lines. Methods of research are shown and an independent problem is assigned for development. The problem is expected to be in the major field of the student and tends to encourage him to go on into the graduate field.

**PROFESSOR McDERMOTT**

1067. **ADVANCED ACCOUNTING.** Second semester. Three credit hours. Principles of bookkeeping are reviewed, new forms used in accounting introduced, partnerships and corporations studied and corporation accounting completed. A working knowledge of simple elements in cost accounting is given. **MR. MARSH**

1068. **ACCOUNTING PROBLEMS.** Second semester. Three credit hours. This is a problem course for those who wish to secure a good general review of the subject of general accounting. Problems are taken up in the various fields of accounting which are similar to the work that the student will find in the office, in industry and in commerce. Students desiring to take a C. P. A. examination need this course. **MR. MARSH**

1069. **THE FEDERAL RESERVE SYSTEM AND MONEY POLICIES.** Second semester. Three credit hours.

This course is a review of the National Banking System, and the causes leading to the adoption of the Federal Reserve System. It is a comprehensive study of the Federal Reserve in its relation to the banks of the country; the discount policy, and the need and working of a centralized banking system, and methods of stabilizing credit. **MR. PORTER**

### CO-ORDINATION (All Departments)

Co-ordination classes are prescribed for Freshmen and Sophomores. Pre-Juniors, Juniors, and Seniors discuss their special problems in informal conferences with instructors. All co-ordination instructors are men who have had practical experience in their respective fields.

700-701. **CO-ORDINATION.** First and second semesters. One credit hour each semester. (Freshmen.)

One hour a week of Freshman co-ordination is devoted to English composition. The written reports on co-operative jobs and inspection trips are read by the instructor in English. Instruction and exercises in effective methods of study and reading are given as an orientation for college work. **MR. GOODELL**



- 702-703. CO-ORDINATION. First and second semesters. One credit hour each semester. (Freshmen in Mechanical Engineering.)

Class room work consists of reports and discussions on the student's outside work. One of the primary objects of the course is to teach the student that by keeping his mind alert he can obtain much valuable information while engaged in practical engineering or industrial work.

ASSISTANT PROFESSOR UPP

- 704-705. CO-ORDINATION. First and second semesters. One credit hour each semester. (Sophomores in Mechanical Engineering.)

During the second year of this course the student is able to take a more active part in his class room work, as the entire period is often assigned to one student who gives an oral or written report on some phase of his outside work.

PROFESSOR GRIFFIN

- 706-707. CO-ORDINATION. First and second semesters. One credit hour each semester. (Freshmen in Civil Engineering.)

This course endeavors to co-ordinate the student's outside work with his classroom work. This is accomplished by means of class discussions and written reports.

PROFESSOR DURST

- 708-709. CO-ORDINATION. First and second semesters. One credit hour each semester. (Sophomores in Civil Engineering.)

A study is made of current civil engineering practice. This is done by means of students' reports of their outside employment. Material is also secured from current civil engineering magazines.

PROFESSOR DURST

- 710-711. CO-ORDINATION. First and second semesters. One credit hour each semester. (Freshmen in Electrical Engineering.)

The purpose of this course is to familiarize the student with the necessary rules of conduct in connection with his outside work, and by informal discussions and written reports to teach him how to derive the most benefit from his co-operative jobs.

PROFESSOR WALTHER

- 712-713. CO-ORDINATION. First and second semesters. One credit hour each semester. (Sophomores in Electrical Engineering.)

This course covers more advanced discussions of such problems as arise in connection with the outside work. Students are expected to make oral and written reports on assigned subjects in connection with their co-operative jobs.

MR. SMITH

- 714-715. CO-ORDINATION. First and second semesters. One credit hour each semester. (Freshmen in Commerce Department.)

This course covers a preparation by the student of reports on outside work with a study of his job, its factors, the tools used, and observed data that puts into practice his college work.

PROFESSOR McDERMOTT

- 716-717. CO-ORDINATION. First and second semesters. One credit hour each semester. (Sophomores in Commerce Department.)

This course is a continuation of courses 714-715, and studies the job and the industry more in detail. Students are encouraged to talk about their work and also the work of other students. In this way the business vocabulary is strengthened and students become familiar with processes in other industries. Fundamentally, the main purpose is to link the work of the University with that in the industry.

PROFESSOR McDERMOTT

### ECONOMICS

PROFESSOR McJOYNT

- 687-688. ECONOMICS. First and second semesters. Six credit hours each semester.

A consideration of the fundamental concepts of economics; definition of terms, theory of value, production, consumption, distribution, etc. A study of practical economic problems such as banking, taxation, trusts, tariff, and socialism.

PROFESSOR McJOYNT

### ELECTRICAL ENGINEERING

PROFESSOR WALTHER, MR. SMITH

905. DIRECT CURRENT THEORY. First semester. Six credit hours.

This course covers elementary electrical engineering and includes the study of the principles of electricity and magnetism, electric and magnetic circuits, direct current generators and motors, and storage batteries.

PROFESSOR WALTHER

906. ALTERNATING CURRENT THEORY. Second semester. Six credit hours.

This course covers elementary electrical engineering and includes the study of fundamental ideas regarding alternating electromotive force and current, resistance, inductance, and capacity in alternating current circuits, and the theory of alternating current generators, motors, instruments, and transformers.

PROFESSOR WALTHER

907. DIRECT CURRENT LABORATORY. First semester. Four credit hours.

This course includes elementary exercises in electricity and magnetism, various practical tests on direct current machines, and supplements the theoretical work given in 905.

MR. SMITH

908. ALTERNATING CURRENT LABORATORY. Second semester. Four credit hours.

This course includes elementary experimental study of alternating current circuits, and various practical tests on alternating current machines, and supplements the theoretical work given in 906.

MR. SMITH

- 911-912-920. **ADVANCED ELECTRICAL THEORY.** First and second semesters, also the following summer term. Five credit hours each semester, and fourteen credit hours for summer term.

This course is a continuation of 905. A more thorough study of the theory and construction of electrical machines and appliances is made. The course includes a large number of problems. During the summer term inspection trips are made to power plants and sub-stations.

PROFESSOR WALTHER

- 913-914-922. **ADVANCED ELECTRICAL LABORATORY.** First and second semesters. Also following summer term. Two credit hours first semester. Four credit hours second semester. Eight credit hours for summer term.

This course is a continuation of course 908 and includes more advanced experimental study of direct and alternating circuits and equipment, and supplements the theoretical work given in 911-912-920.

PROFESSOR WALTHER

941. **ELECTRIC POWER TRANSMISSION.** First semester. Five credit hours.

This course covers the study of transmission and distribution of electrical power. The economic, mechanical, and electrical principles involved are considered for both underground and overhead systems.

PROFESSOR WALTHER

952. **ELECTRIC RAILWAYS.** Second semester. Four credit hours.

This course includes the study of the forces acting on a train, speed time curves, energy requirements, motor capacity, systems of control, direct versus alternating current, and electricity versus steam for railways.

PROFESSOR WALTHER

- 961-962. **SPECIAL ELECTRICAL PROBLEMS.** First and second semesters. Six credit hours each semester.

This course is designed to teach the seniors in electrical engineering to work independently. Special exercises are assigned individuals or to groups, such as advanced laboratory experiments or design and construction of special equipment.

PROFESSOR WALTHER

## ENGLISH

MR. GOODELL

- 660-661. **ENGLISH COMPOSITION.** First and second semesters. Four credit hours each semester.

Steady practice is given in writing technical descriptions, explanations, and professional letters, and in informal oral argumentation. Students are encouraged also to give imaginative interpretation and presentation of the work of the engineer. Correctness in sentence structure, punctuation, and spelling are strictly insisted upon.

MR. GOODELL

662-663. ENGLISH COMPOSITION. First and second semesters. Five credit hours each semester.

This course is planned for students in the commerce department. The first semester is devoted to the study of grammar, punctuation, and sentence structure, and of credit and collection letters. The other types of letters and business reports are studied during the second semester.

MR. GOODELL

664-665. ENGLISH LITERATURE. First and second semesters. Two credit hours each semester.

Modern novels and short stories are read for their cultural and recreational value, and essays on scientific and engineering subjects are studied for the purpose of finding the literary and philosophical values in non-literary subjects. Supplementary reading is an important part of the course.

MR. GOODELL

## MATHEMATICS

PROFESSOR JONES, PROFESSOR EGBERT, MISS LIPSCOMBE, MISS YOUNG

The course in Mathematics given to engineering students does not follow the regular line of instruction as given in the past. Calculus is introduced in the first semester of the freshman year, as are also some of the fundamental notions of analytical mechanics. This is done in order to obtain a larger time factor which plays such an important part in the learning process.

650-651. ENGINEERING MATHEMATICS. First and second semesters. Six credit hours each semester.

The work of the first semester includes a review of arithmetic and elementary algebra, computations, the use of tables, the trigonometric functions, graphs, elements of calculus, and logarithms.

The work of the second semester includes the study of the exponential and logarithmic functions, certain topics of analytic geometry, solution of equations, and a further study of calculus.

652-653. ENGINEERING MATHEMATICS. First and second semesters. Six credit hours each semester.

The study of the trigonometric functions and their inverses is completed during the first semester. The applications of the trigonometric functions to analytic geometry and analytic mechanics, differentiation, and integration of the simpler functions are also carried out.

The studies of the second semester include such topics as functions of several variables, surfaces, the integration of functions by means of tables, and reduction theorems.

654. ENGINEERING MATHEMATICS. Summer term. Six credit hours. The course given in the summer session devotes the entire time to such applications of calculus as center of gravity, moment of inertia, and fluid pressure.



655-656. **ENGINEERING MATHEMATICS.** First and second semesters.  
Three credit hours each semester.

The Mathematics of the engineering courses is concluded in the Pre-Junior year. Throughout the year practical work, affording a review of all previous courses is given. During the first semester brief treatment of vectors and empirical formulas is also given.

The work of the second semester includes a discussion of mathematical formulas appearing in engineering journals, and simple differential equations.

658-659. **COMMERCIAL MATHEMATICS.** First and second semesters.  
Six credit hours each semester.

The course in Mathematics for the students in the commerce department emphasizes those subjects which will be of greatest value to their college and life work. During the first semester in addition to the basic work in algebra such topics as compound interest, annuities, depreciation and bond valuation are considered.

The work of the second semester includes a more thorough study of bond valuation, the financial operation of building and loan association, and a basic course in the mathematics of insurance.

## MECHANICAL ENGINEERING

PROFESSOR GRIFFIN, ASSISTANT PROFESSOR UPP, MR. SAHAG

721. **ELEMENTARY ENGINEERING LABORATORY.** First and second semesters. Four credit hours each semester.

This course, which is required of all freshmen in engineering, furnishes an introduction to the essential principles and methods in civil, mechanical, and electrical laboratory work, and will help the student to choose his particular course. One third of the year is spent in each of the three laboratories; civil (721-C), electrical (721-E), and mechanical (721-M).

PROFESSOR DURST (Civil Engineering)

PROFESSOR WALTHER (Electrical Engineering)

ASSISTANT PROFESSOR UPP (Mechanical Engineering)

725. **MECHANICAL DRAWING.** First semester. Four credit hours.

This course is given to freshman commerce students. The use of instruments, lettering, and geometrical problems are taught during the first part of this course followed by exercises in charts and graphs.

PROFESSOR GRIFFIN

727. **ELEMENTARY ENGINEERING DRAWING.** First semester. Four credit hours.

The object of this course is to train the student in freehand sketching, lettering, and mechanical drawing. Special attention is given to the proper use and care of drawing instruments.

PROFESSOR GRIFFIN, MR. SAHAG

**728. PROJECTION DRAWING.** Second semester. Four credit hours.

This course is intended to teach the student how to represent an object by showing the proper views. The assigned exercises include problems in orthographic projection, isometric, and oblique drawing, and the conventional methods of drawing bolts, nuts, screw threads, and structural shapes.

PROFESSOR GRIFFIN, MR. SAHAG

**729. DESCRIPTIVE GEOMETRY.** First semester. Four credit hours.

The science of graphic representation is studied with problems on points, lines, planes, surfaces, and solids with practical applications. MR. SAHAG

**730. MACHINE DRAWING.** Summer term. Twelve credit hours.

A study is made of the modern drafting-room methods of making machine drawings. Students make freehand sketches of machine parts, detail and assembly drawings, tracings, and blue prints.

PROFESSOR GRIFFIN, MR. SAHAG

**733. MECHANISM.** First semester. Five credit hours.

A study is made of the various means of transmitting and modifying machine motions and the determination of the relative displacement, velocity, and acceleration of different machine parts.

ASSISTANT PROFESSOR UPP

**735. MECHANISM DRAWING.** First semester. Two credit hours.

In connection with Mechanism 733 students make layout drawings of various methods of transmitting and modifying motion by means of links, cams, gears, and other common machine parts.

ASSISTANT PROFESSOR UPP

**736. MACHINE DESIGN.** Second semester. Six credit hours.

The fundamental principles involved in the design and operation of machinery are studied, with problems on the design of riveted joints, keys and shafting, belting, chains and sprockets, gears, bearings, couplings, and other machine parts.

MR. SAHAG

**737. MACHINE DESIGN.** Summer term. Twelve credit hours.

In this course the student applies the theory as taught in Machine Design 736 and makes a complete design and drawing of an assigned machine.

MR. SAHAG

**742. ELEMENTARY HEAT ENGINEERING.** Second semester. Five credit hours.

This course is required of all sophomores in engineering. Steam boilers, engines, and other mechanical power units and accessories are studied from a descriptive standpoint, for the purpose of general information and assistance in grasping the theory and design involved in succeeding courses.

PROFESSOR GRIFFIN

**744. THERMODYNAMICS.** Second semester. Six credit hours.

This course is required of seniors in mechanical and electrical engineering. The study of the transformation of heat into mechanical energy touched upon in course 742 is continued with special reference to steam boilers, engines and turbines, internal combustion engines, refrigerating systems, etc.

ASSISTANT PROFESSOR UPP

747. **HYDRAULICS.** First semester. Six credit hours.

This course is required of juniors in civil engineering and seniors in mechanical and electrical engineering. Some of the fundamental laws on which the theory and design of hydraulic constructions and machinery are based, are studied with special reference to their application in hydro-electric installations.

PROFESSOR GRIFFIN

752. **MECHANICAL ENGINEERING LABORATORY.** Summer term. Four credit hours.

This course is devoted to the calibration and the use of instruments and apparatus such as pressure and vacuum gages, thermometers, steam and gas engine indicators and steam calorimeters.

ASSISTANT PROFESSOR UPP

753. **MECHANICAL ENGINEERING LABORATORY.** Summer term. Ten credit hours.

This course consists of internal combustion engine and gas producer tests. One or two out of town inspection trips are also features of this course.

ASSISTANT PROFESSOR UPP

762. **GAS AND OIL ENGINES.** Second semester. Three credit hours.

The fundamentals involved in the theory, design, and operation of internal combustion engines are studied in this course. Special attention is given to automotive and oil engines.

ASSISTANT PROFESSOR UPP

763-764. **STEAM POWER PLANTS.** First and second semesters. Four credit hours each semester.

Properties of steam, combustion, methods of burning coal, oil, and pulverized coal, and typical power plant installations are studied during the first semester. The second semester consists of laboratory work on the testing of steam engines, steam turbines, condensers and auxiliary apparatus.

ASSISTANT PROFESSOR UPP

765. **HEATING AND VENTILATION.** First semester. Four credit hours.

The purpose of this course is to present the fundamental principles which apply, and the methods of construction which are used in various systems of heating and ventilation.

PROFESSOR GRIFFIN

766. **ELECTIVE IN MECHANICAL ENGINEERING DEPARTMENT.** Second semester. Five credit hours.

In this course the student works out a design or laboratory problem under the supervision of the instructor in charge. The student is required to turn over to the department all data, drawings, etc. in the form of an engineering report.

PROFESSOR GRIFFIN, ASSISTANT PROFESSOR UPP

## PHYSICS

PROFESSOR HOUSEHOLDER, MR. DAVIES,

ASSISTANT PROFESSOR GILMOUR

These courses are arranged to cover the subject of mechanics in the first two years, and heat and light during the first semester of the third year. Since each course is built upon the preceding course, it is imperative that they be taken in the order given in the catalog.

679-680. PHYSICS. First and second semesters. Five credit hours each semester.

An elementary course in statics. A thorough study of the conditions under which equilibrium can be obtained and the application of these principles to problems involving simple machines, pier reactions, center of gravity, simple frames and trusses. The course is primarily a laboratory course, but the fundamentals of analytical and graphical analysis must be mastered in order to continue with the succeeding courses. Three recitations and four hours laboratory work per week.

PROFESSOR HOUSEHOLDER, ASSISTANT PROFESSOR GILMOUR

681-682. PHYSICS. First and second semesters. Six credit hours each semester.

A continuation of 679-680 completing the subject of statics and covering the whole field of dynamics, including some work on wave motion. Four recitations and four hours laboratory work per week.

PROFESSOR HOUSEHOLDER, MR. DAVIES

683. PHYSICS. First semester. Five credit hours.

A course covering fundamental principles of heat and light with special emphasis on their engineering application. This course cannot be taken before 682. Five exercises per week; three recitations and two laboratory periods.

MR. DAVIES

## SPANISH

MR. TAILLIART

671-672. BEGINNING SPANISH. First and second semesters. Six credit hours each semester.

As soon as practicable, the students will be given work of definite commercial value in translation and composition.

MR. TAILLIART

673-674. SECOND YEAR SPANISH. First and second semesters. Six credit hours each semester.

The aim of this course is to give the student a working knowledge of present-day conditions, opportunities, and business methods in the principal Hispanic countries. Conversational Spanish and practice in actual business correspondence will be emphasized.

MR. TAILLIART



## MILITARY AND PHYSICAL TRAINING

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### PHYSICAL EDUCATION

MR. FRED E. SEFTON, *Director*

MR. BABCOCK, MR. SMITH, MR. RICKER, MISS DUNCKLEY

#### AIMS

Physical education is conducted under the direct supervision of experienced physical directors, who are members of the University faculty. The aims of the department are to develop organic power, the basis of vitality, the prerequisite to physical and mental efficiency, and to secure and maintain good posture, a harmonious muscular development, and a certain degree of bodily skill and grace.

A thorough physical and medical examination is given to all students entering the University. Physical defects, abnormalities, and weaknesses are noted, and healthful exercise is prescribed to fit the student's individual needs; this may include athletic sports or remedial gymnastics.

During the fall and spring months there are outdoor exercises and games at Buchtel Field. During the winter months the time is given up to boxing, wrestling, basketball, apparatus work, wand, dumb-bell and swinging club drills.

These exercises are designed to bring about the erect carriage of the body, the development and strengthening of the muscular, circulatory and respiratory systems, and the maintenance of general good health and bodily vigor.

#### TRAINING COURSE

A course for training teachers in physical education and for preparation for coaching is given in conjunction with Teachers College. For details see statement under Teachers College.

#### EQUIPMENT

The gymnasium is 100 feet long and 50 feet wide. On the ground floor are locker and bath rooms. Above is the practice floor where exercises are conducted. Directly over the practice floor is the running track. The main floor of the gymnasium is 80 feet by 50 feet and is equipped with modern gymnastic apparatus.

A six-acre athletic field is provided for the use of the students, and all intercollegiate and other games and meets are held there. The field is equipped with a grandstand which accommodates 8,000 spectators, dressing rooms, cinder running track, baseball diamond, and football field.

### PHYSICAL TRAINING FOR MEN

Every student is required to take a physical examination on entering the University. All freshman and sophomore men are required to take two hours of physical training each week as a part of the combined course in military and physical training. In addition, all candidates for the A. B. degree must take the course in Human Biology 413-414, two hours a week for a year, unless they elect Physiology 407-408.

### INTERCOLLEGIATE SPORTS

Intercollegiate sports are under the government of the Ohio Athletic Conference, the faculty committee appointed by the president, and a Board of Control consisting of members from the faculty and representatives of the student body elected by the students.

### PHYSICAL TRAINING FOR WOMEN

All freshman women are required to take two hours of physical training each week. In addition, all candidates for the A. B. degree must take the course in Human Biology 415-416, two hours a week for a year, unless they elect Physiology 409-410.

### MILITARY SCIENCE AND TACTICS

#### RESERVE OFFICERS' TRAINING CORPS

CAPTAIN WM. L. TYDINGS, FIRST LIEUTENANT MERL L. BRODERICK,  
FIRST LIEUTENANT EDMUND MORTIMER GREGORIE,  
MASTER SERGEANT HENRY METZGER.

In 1919 the U. S. Government established at the University of Akron a unit of the Reserve Officers' Training Corps. This unit is of the same sort as those established at practically all of the large universities and colleges throughout the country with the idea of producing trained men for the Officers' Reserve Corps. The instruction is divided into two parts: the basic course of the first two years, compulsory for all freshman and sophomore men who are physically fit; and the advanced course of the last two years, elective for the men who have completed the basic course satisfactorily.

#### BASIC COURSE

All freshman men not physically disqualified must take this course, unless they have been in the federal service more than one year, or are not citizens of the United States. The work is given three hours per week for the first two years. In addition, all men of the basic course are required to take two hours' physical training each week under the direction of the Physical Director. Two hours' credit is given each semester for this combined course of military drill and physical training.

Men entering the College of Liberal Arts of the University of Akron with advanced credit from other institutions are not required to take military and physical training if they have been two years in attendance at another institution of collegiate grade, or if they present 48 hours of college credits.

During this basic course no compensation is paid the student by the war department, but uniforms and equipment are issued for his use. Each student is held responsible for loss or damage to government property issued to him. Uniforms must be turned in at the completion of each year, or at the time of leaving school; they are replaced at the beginning of the next school year.

Students entering this institution from other colleges or universities and claiming credit for previous military instruction, will confer with the military department at the beginning of the term and ascertain the amount of credit which can be given them on account of such previous military instruction. This will enable such new students to arrange their programs promptly and satisfactorily.

#### BASIC COURSE, 3 HOURS, FRESHMAN YEAR

Subject	Theoretical Hours	Practical Hours
Military Courtesy .....	3	
Command and Leadership .....	30	34
Rifle Marksmanship .....	5	10
Physical Training .....		6
Military Hygiene and First Aid .....	6	2
Total hours per school year.....	44	52.....96

#### BASIC COURSE, 3 HOURS, SOPHOMORE YEAR

Subject	Theoretical Hours	Practical Hours
Scouting and Patrolling .....	4	8
Automatic Rifle .....	4	8
Musketry .....	4	6
Command and Leadership .....	20	38
Interior Guard Duty .....	2	2
Total hours per school year.....	34	62.....96

#### ADVANCED COURSE

This course consists of five hours per week (three hours' credit per semester) during the junior and senior years. It is open to all students who have satisfactorily completed the basic course, provided they have been selected by the President of the University and the Professor of Military Science and Tactics. A deposit of \$10.00 is required, which is returned to the student upon surrender of his uniform, if he has completed the academic year. During this course the Government not only furnishes uniform and equipment, but also allows commutation of subsistence, which varies from time to time, at present being \$10 per month.

Attendance at one summer camp of not more than six weeks' duration is required; for this attendance pay at the rate of \$0.70 a day is allowed. On the satisfactory completion of the advanced course, the student is commissioned in the Army of the United States as a second lieutenant. Promotions are made as in the regular army.

#### ADVANCED COURSE, 5 HOURS, JUNIOR YEAR

Subject	Theoretical Hours	Practical Hours
Browning Machine Gun .....	18	38
Field Engineering .....	8	4
Military Law .....		
Rules of Land Warfare } .....	12	4
Command and Leadership .....	18	34
Military Sketching .....	10	14
Total hours per school year.....		66 94.....160

#### ADVANCED COURSE, 5 HOURS, SENIOR YEAR

Subject	Theoretical Hours	Practical Hours
Military History and National Defense Act.....	20	
Administration .....	2	6
Combat Principles .....	21	31
Command and Leadership .....	18	34
Howitzer Company Weapons .....	14	14
Total hours per school year.....		75 85.....160

Prerequisites for the advanced course are successful completion of the basic course, and selection by the President of the University and the Professor of Military Science and Tactics.

Either basic or advanced course, once entered upon, must be completed as a prerequisite for graduation.

Instruction consists of theoretical classroom work with proper preparation of subjects for recitations, and practical work either indoors or out, putting into execution the lessons learned in the classroom. The facilities of the basic as well as of the advanced course should be utilized to the fullest extent, so that our Reserve Corps of officers may be strengthened by trained college graduates.

### SUMMER CAMPS

A summer camp is held each year for the benefit of those students who desire to attend. One camp of six weeks' duration is required of all members of the advanced course. Attendance at the summer camp is not compulsory for students taking the basic course; but to those who attend, the Government pays mileage from their homes to the camp and return, at the rate of five cents per mile. All clothing, equipment, and subsistence is furnished at the camp at no expense to the student. Athletics, dances, and other forms of social amusement play a part in the camps, as well as shooting on the rifle range, troop maneuvers, etc. Those desiring to attend should signify their intention at the completion of the first semester so that proper arrangements can be made for them at the camp.



## MUSIC

MR. FRANCESCO B. DE LEONE, *Director*

The work in music is open to election by members of all college classes. It includes a recitation course in the study of music, meeting twice a week through the year, and participation in Glee Club, Band, or Orchestra, two hours each week.

All students desiring to participate in the classroom work in music, or in Orchestra, Band or Glee Club, must arrange for it on registration days as part of their regular assignment of work for the semester.

In no case shall the total credit for music exceed ten semester hours.

Students who desire to take no studies except music must fulfill the regular requirements for college entrance.

**THE STUDY OF MUSIC.** First and second semesters. Two credit hours each semester.

This course is carried on as classroom work and is chosen from the following subjects: rudiments, theory of music and elementary harmony, thorough bass, ear training, first year history of music, biographical history of music, musical appreciation, study of operas, etc. Students are not allowed to enter the course in the middle of the year.

**MEN'S GLEE CLUB.** First and second semesters. One credit hour each semester.

**WOMEN'S GLEE CLUB.** First and second semesters. One credit hour each semester.

**ORCHESTRA.** First and second semesters. One credit hour each semester.

**BAND.** First and second semesters. One credit hour each semester.







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THE MUNICIPAL UNIVERSITY OF AKRON  
AKRON, OHIO

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BULLETINS PUBLISHED THIS YEAR

General Catalog.

Buchtel College of Liberal Arts and Curtis School of  
Home Economics Bulletin.

College of Engineering and Commerce Bulletin.

Teachers College Bulletin.

Inauguration of President Zook Bulletin.

General Information Bulletin.

Summer Session Bulletin.

Evening Session Bulletin.

Annual Reports of President, Clerk, and Bureau of City Tests.

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For Copies Address: Miss Gladys Weeks, Registrar.

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Ulysses S. Vance, Editor.